6. ENGINEERING SYSTEMS REQUIREMENTS

C10 INTERIOR CONSTRUCTION

SYSTEM DESCRIPTION

Interior construction includes interior partitions, interior doors, and fittings.

Provide durable construction appropriate for the building's function as a Marine Corps barracks. Acoustic properties of materials, as well as durability, shall be considered during material selection.

GENERAL SYSTEM REQUIREMENTS

The Project is subject to high abuse and requires "Impact Resistant" systems be provided. See Room Requirements for specific requirements on "Partitions", "Interior Doors", and "Specialties".

C1010 PARTITIONS

All interior partitions shall be concrete masonry or cast-in-place concrete with a skim coat of acrylic, impact resistant plaster finish.

Concrete mixture shall provide an average compressive strength of 3000 PSI (20,680 kPa) and meet or exceed ACI 301/301M.

C101001 FIXED PARTITIONS

Provide CMU for the interior partitions. Sound-rated partition assemblies around perimeter walls of each sleeping room and corridor shall have a minimum Sound Transmission Coefficient (STC) of 55 in accordance with ASTM E 90 or ASTM E 413 for frequency data and UFC requirements. Seal all penetrations and openings to achieve the required STC ratings. Provide fire rated CMU at rated wall assemblies.

All partitions must extend to the underside of the roof or floor structure above. All partitions must extend to the underside of the roof or floor structure above where required to provide fire rating separation. Provide corner guards at the outside corners of all walls in corridors, lobby spaces and open offices.

Floor and ceiling assemblies shall have a minimum sound transmission class of STC 55 and shall have an impact isolation class of at least IIC 50. See Room Requirement sheets for specific requirements.

C101002 DEMOUNTABLE PARTITIONS

Not Used

C101003 RETRACTABLE PARTITIONS

Not Used

C101004 INTERIOR GUARDRAILS AND SCREENS

Not Used

C101005 INTERIOR WINDOWS

Provide interior windows of fixed hollow metal or aluminum assemblies where indicated or as indicated in the room requirement sheets. Vision panels for interior doors shall also have tempered glazing.

C101006 GLAZED PARTITIONS & STOREFRONTS

Provide glazed storefront system for the interior vestibule doors.

C101007 INTERIOR GLAZING

Interior glazing shall be clear glass, tempered glass. Vestibule glazing must be designed in accordance with UFC 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings.*

MSAU HQ-BEQ

Bullet-resistant windows shall be used for the Post 1 interior windows and shall meet U.L. Classification, as required for the installation. Each window shall be a complete factory-assembled unit with glass factory or field installed. Provide a deal/pass through tray in compliance with DOS Embassy Standards for Post I windows.

C1020 INTERIOR DOORS

C1020001 STANDARD INTERIOR DOORS

All interior door frames shall have painted hollow metal frames. Interior doors shall be solid core wood or hollow metal. Provide rated doors and frames at rated walls required by code.

All interior doors shall be flush type doors and shall be insulated metal or solid core wood as identified in the Room Requirements Sheets.

Flush wood doors shall be WDMA I.S.6A-01, premium grade, extra heavy duty. All wood doors shall have structural composite lumber core, or staved lumber core. Do not use particleboard cores.

Flush Steel doors shall be Maximum Duty, Level 4 in the MCESG Annex building and extra heavy duty, Level 3 in the MSAU HQ-BEQ.

Wood doors shall have Factory Finish of AWI Quality Standards Section 1500, specification for Conversion varnish alkyd urea, catalyzed polyurethane or acrylate UV curable epoxy.

Provide 45 STC sound rated door and standard hollow metal door frame with continuous sound/ weather seals around the door to create a sound control door. Provide sound/weather seals at the top and both sides that are integral with the door frame and drop down door bottom sound/weather seals shall rest on a metal threshold. After installation, test the doors with a flashlight to determine if any gaps in the sound seals allow light to be viewed on the opposite side of the door.

Where indicated in the Room Requirements Sheet provide Force Entry/Ballistic Rated (FEBR) doors complying with DOS/OBO embassy standards. Provide Level 4 Maximum Duty hollow metal (FEBR)

doors with extra wide stiles and rails to accommodate DOS/OBO embassy hardware.

C102002 GLAZED INTERIOR DOORS

Provide vision glazing (lites) in solid doors where it is required by the Room Requirements portion of this RFP, or it is deemed advantageous to be able to see through the door, either for safety of pedestrian traffic, or other functional reason.

C102003 FIRE DOORS

Provide interior fire doors as necessary to meet applicable codes.

C102004 SLIDING AND FOLDING DOORS

Not Used

C102005 INTERIOR OVERHEAD DOORS

Not Used

C102006 INTERIOR GATES

Not Used

C102007 INTERIOR DOOR HARDWARE

Provide card key or keypad type access units for Room Plan entry doors and building main entry doors. Provide lithium battery powered, magnetic stripe keycard locksets that are ANSI/BHMA A156.2, Series 4000, Grade 1, cylindrical locks, tamper resistant, UL listed with 1-inch (25 mm) throw deadbolt, 3/4-inch (19 mm) throw latch bolt, auxiliary dead-locking latch, and 2-3/4 inch (68.75 mm) backset. Provide the services of an Architectural Hardware Consultant (AHC). All hardware provided shall meet the requirements of NFPA 80 for Fire Doors and NFPA 101 for exit doors.

Lock and cores shall match or compatible the BEST systems. All door hardware will comply with ADA, life safety and security requirements. Provide a fire-rated, wide-angle security view port at 60-inch (1524 mm) height, for all sleeping room module entrance doors.

Door hardware finish shall be chrome-plated brass or bronze, or stainless steel.

Where indicated in the Room Requirements Sheets provide Force Entry/Ballistic Rated (FEBR) door hardware complying with DOS/OBO embassy standards.

C102091 OTHER INTERIOR PERSONNEL DOORS

Provide access doors and panels where required to access serviceable equipment.

C1030 SPECIALTIES

C103001 COMPARTMENTS, CUBICLES, & TOILET PARTITIONS

Provide stainless steel toilet partitions in all toilet rooms with more than one (1) water closet or urinal

as indicated on floor plans. Provide toilet accessories as indicated in Chapter 3, Room Requirements portion of this RFP. Compartments shall be ceiling hung with privacy strips. Continuous wall flanges shall be used at all urinal screens.

C103002 TOILET AND BATH ACCESSORIES

Provide stainless steel toilet and bath accessories. Accessories shall include Toilet Tissue Dispensers, Paper Towel Dispensers, Combination Paper Towel Dispenser/Waste Receptacle, Sanitary Napkin Disposal Units, Medicine Cabinets, Towel Bars, Grab Bars, Robe Hooks, Mirrors, Soap Dispensers.

C103003 MARKER BOARDS AND TACK BOARDS

Provide marker boards and tack boards as indicated in Part 3 Room Requirements portion of this RFP. Marker boards and tack boards are funded as part of the construction contract.

C103004 IDENTIFYING DEVICES

All necessary interior signage shall be incorporated as part of the architectural drawings. Interior signage is not collateral equipment. Interior signage shall demonstrate complete coordination with the facility design, SID and FF&E submittals. Provide interior directional signage as required for facility way finding as required by FC 4-721-10N. Provide an identifying device at each interior door. Signs must meet ADA requirements.

C103005 LOCKERS

Provide lockers with special bases of concrete. Lockers shall be metal construction. Lockers are funded as part of the construction contract. Provide stand-alone locker benches with lockers.

MSAU HQ-BEQ – Mesh Cages

Provide 6-gauge wire mesh cages with sliding mesh door and pad lock receiver. Each cage shall have four (4) sides and a top. Cages are funded as part of the construction contract. See Part 5 – Prescriptive Specifications, Specification 10 22 13.

C103006 SHELVING

MSAU HQ-BEQ

Provide stainless steel standards and brackets with five (5) metal wire shelving, placed on one wall of all room module closets. Provide one (1) metal wire hat rack with one (1) upper and one (1) lower clothes rod, placed on one (1) closet wall. Built-in fixed shelving is funded as part of the construction contract.

Squad Cage Storage to have min. 27 LF metal shelving placed on one side of the cages.

C103007 FIRE EXTINGUISHER CABINETS

Provide fire extinguisher cabinets. Cabinet shall be semi-recessed and surface-mounted in new mechanical/electrical spaces. Cabinets shall not be break-glass type and shall adhere to requirements in MCB Quantico Fire and Emergency Services Facility Design and Construction Requirements. Cabinets shall be coordinated with interior finishes. Installation and locations shall be in accordance with NFPA 10.

C103008 COUNTERS

Provide solid surface counter tops and back splashes within a Grade 3 level with a full range of color selection.

C103009 CABINETS

Provide cabinetry and millwork items with associated accessories. Cabinetry shall be AWI custom grade and have concealed hinges with adjustable standards for shelves. All exposed surfaces will be hardwood veneer with exposed edges of solid hardwood. In the MCESG Annex, all exposed surfaces will be plastic laminate. Cabinet frames, doors and drawer fronts shall be hardwood. In the MCESG Annex all cabinet frames, doors and drawer fronts will be plastic laminate. MDF, particleboard or HDF is not permitted in the cabinet construction.

Provide specific cabinetry as shown on the Room Requirements Sheets.

C103010 CASEWORK

Provide specific casework as shown on the Room Requirements Sheets.

C103011 CLOSETS

Not Used

C103012 FIRESTOPPING PENETRATIONS

Provide all sleeves, caulking, and flashing for firestopping penetrations.

C103013 SPRAYED FIRE-RESISTIVE MATERIALS

Provide sprayed fire-resistive materials to the building's steel structure or framework where required by code to prevent structural failure.

C103014 ENTRANCE FLOOR GRILLES AND MATS

Provide a stainless steel recessed pan floor mats at main building entrances. Mat insert shall be removable for cleaning.

C103015 ORNAMENTAL METAL WORK

Recessed metal corner guards applicable in areas indicated in the Room Requirements sheets.

C103090 OTHER INTERIOR SPECIALTIES

MSAU HQ-BEQ

Provide in wall blocking and wall or ceiling mounted motorized projection screen and ceiling mounted projector, as approved by the client.

High Density Storage Systems

References: Department of the NAVY OPNAV Instruction 5530.13C. Applicable military requirements for the physical security instruction for conventional arms, ammunition and explosives

High Density Storage Systems consisting of manufactured storage units mounted on manufacturer's track-guided carriages to form a compact mobile storage system.

Armory Stacks, unless otherwise noted, are fully recessed manual compact mobile storage system, each double-sided unit shall have a fixed base shelf and height shall be 102" above finish floor, minimum of 18" below the finished ceiling. Length shall be as per floor plans.

System design permits access to any single aisle by moving units until the desired aisle is opened.

The carriage/rail system provides uniform carriage movement along the total length of travel, even with unbalanced loads.

Rail System is to be an L load rail system with concrete form. This rail allows for precision alignment for long-term carriage operation under heavy uses.

Carriages are formed structural steel frame with hardened steel wheels riding on steel rails recessed mounted into the concrete floor. Rails should be chosen by the manufacturer to ensure smooth operation and self-centering of mobile storage units during travel whiteout endplay or binding. Rail types, quantities and spacing shall be selected by the manufacturer to suit installation conditions and specifications requirements. All bearings used in the drive mechanism shall be permanently shielded and lubricated.

Carriage and Platform Splice are tongue and groove design with tension bolted design wand welded attachment to maintain the carriage load bearing integrity when a splice joint in the face is required.

Drive System Carriages shall be driven by synchronized drive wheels on both sides of wheel housing(s). Each moveable carriage shall have a minimum of two (2) sets of dual driven wheels. Drive wheels to be a minimum of 5-inch diameter and connected was a roller chain to ensure even wheel movement. Multiple drive wheel assemblies shall be interconnected with a continuous 1-inch diameter steel drive shaft for simultaneous wheel rotation and even, parallel carriage movement. All wheels to be machined from solid 1045 and equipped with two (2) permanently shielded bearing assemblies. Spacers to be provided on both sides of wheel bearing to eliminate friction between wheels and carriage, or provide 1-inch diameter steel drive shafts driving all wheels on both sides of carriage.

Guidance System is Roller guide bearing system that allows for even wheel alignment. All bearings should be sealed and permanently lubricated. Provide in rail anti-tip devices built into the system's wheel assembly.

Safety Features include every potential aisle shall be protected with a solid state infrared, sensor system located on both sides of each carriage no higher than 1-inch above the floor scanning the entire length of the carriage. When the beam is interrupted by a person or object as the aisle is closing, all carriages shall stop. The beams shall be operational when the carriages are not moving. Should a beam be blocked in an open aisle, the carriages will not close on that aisle. The system should automatically reset if blocked and then cleared when the carriage is not moving.

Aisle Entry Sensor include each potential aisle shall have an infrared photo beam mounted 20" from the base of the face panel that transmits across the open aisle. If the beam is blocked or interrupted when an aisle is closing, the system shall stop carriage movement.

Should a user enter an opening aisle, carriage movement will continue until the aisle is fully opened. The control system then locks that aisle open, preventing carriage movement. Should a user enter an aisle that has been reset, the system shall activate preventing carriage movement. The aisle entry sensor system shall be wired in a fail-safe configuration and should be totally solid state construction.

Secured Weapons Storage Cabinets: Assemblies consist of fully welded, heavy-gauge steel cabinets available in five (5) heights to accommodate weapons of varying lengths. All five (5) cabinets are either 22.38" or 42.38" wide and 16.25" deep. Built-in, folding, retractable cabinet doors retract completely inside the cabinet when fully open so there are no swinging doors to obstruct the aisle way. The doors have heavy-gauge steel, rotating locking bars to provide maximum security. (Lock not included.) The doors, sides, and back of the cabinet are perforated with a diamond mesh pattern to allow visible counts or weapon inventory to be taken even when the cabinet is closed and locked.

Face Panels on all exposed ends of stationary and moveable shelf ranges shall have high-pressure laminate face panels. Edges of the face panels to have heavy-duty black plastic extrusions. Cardholders for 3" x 5" cards shall be provided for each aisle. Select laminate color from manufacturer standard selection.

MCESG ANNEX

Display cases

Provide archival wood veneer Display Cases with integral operable glass door panels and related hardware, hinges and accessories.

Display cases shall have:

Operable glass door panels 3/8" thick clear, UV resistant, white heat tempered safety glass, mounted in steel C-channel with dual action hinge. Compression seals for dust control. Frameless construction with no intermediate vertical support. In the closed position, adjacent glass panels shall remain in one plane. Adjustable alignment pins shall assure that the glass is properly closed and positioned. Structural components shall not be visible, fasteners shall be concealed and locking is provided by means of pin tumbler cylinder locks. Metal finish is factory primed and painted with two-component polyurethane. Hinges: Dual actuated hinges manufactured from high-strength aircraft aluminum and requiring no lubrication. When unlocked the door panel releases from the compression seal and rotate out and away from the display space providing full access. The pivot end of the panel does not rotate into the display space.

Lighting: LED fixtures, dimming controls.

Wall-mounted archival display cases dimension: 12" deep (clear) by 120" high and length as per floor plans.

Security: Security contact closure sensors that connect to PMO.

--End of Section--